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Organo-Therapy.*

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In presenting this thesis upon organo-therapy, I am not presuming to teach my fellow colleagues any knowledge which they have not already had opportunity of eliciting for themselves. My object and desire is to emphasise the great advantages to be gained by employing these organic products in our patients, and to enumerate those pathological or other conditions for the alleviation of which they are especially indicated.

Judging from a perusal of our veterinary literature, and also from conversations with veterinary practitioners, it would appear that organo-therapy does not occupy that position of importance in their every-day practice which it merits; and even if my conclusions upon that point are incorrect, it is hoped that this paper will provoke such animated discussion that some or all of us may be enabled to profit to some extent from our colleagues' experiences.

The particular organs of the body from which extracts have been prepared are the pituitary gland, suprarenal gland, thyroid and parathyroid glands, testicles, ovaries, pineal gland, and thymus. These, collectively, constitute the endocrine system, the internal secretions of which exert a profound and even vital influence upon the animal body. Until comparatively recently, the only animal secretions employed therapeutically were bile and other digestive ferments, though these are now augmented or even superseded by several others, since it has been shown that certain glands pour into the blood-stream substances which are essential to the economy, and which—if deficient—are productive of the gravest symptoms. Notwithstanding the advances made in the study of internal secretions, the subject is still really in its infancy, for there are many questions which have not as yet received a satisfactory solution. The chief objects of treating disease with animal extracts are to supply a deficiency of the normal secretion or to stimulate an organ to greater effort; and the brilliant results obtained by the use of thyroid extract, and adrenalin, encourage one to anticipate even greater results from continued research.

* Presented to the Central Division.

THE PITUITARY BODY.

Location. Nature's provision for the safeguarding of vital tissues is in no instance better exemplified than by the location of the hypophysis. It is one of the best protected structures in the body, being situated at the base of the brain, in a little bony cup—the *Sella Turcica.*

Functions. One of the first questions of interest in studying a gland's function is its necessity to life. Many investigators have attempted to answer this question by determining the effects of its removal. Marinesco reported that removal of the pituitary body from cats was fatal within one to fourteen days after the operation. Before death the animals showed signs of emaciation, and a fall in temperature and heart rate. Vassale and Sachi reported that such removal from dogs and cats resulted in death within five to seven days. The symptoms before death consisted in an accelerated respiration (amounting at times to dyspnœa), polyuria, polydipsia, emesis, rigidity of posterior limbs, and clonic as well as tonic convulsions. Partial removal caused less pronounced symptoms, and occasionally the animal survived. Later, however, Friedmann and Maas reported that extirpation of the gland *was* compatible with life, and no less than four others came to the same conclusion; but whilst they admitted that serious symptoms and even death often followed its removal, they attributed these unfortunate events to cerebral traumatisms or infections, and, personally, I would very much incline to their view. The fact that some animals survived 50 to 80 days was advanced as sufficient proof that the gland was not of vital importance. Fichera found that partial removal of the gland in pullets caused, not death, but stunted growth. It seems generally accepted by physiologists to-day that life is incompatible with the loss of the anterior lobe, no importance being attached to the posterior lobe. Further, that the control over the body by the pituitary gland is exerted through an internal secretion elaborated by the cells of the anterior lobe. So much for the experimental side of the question.

We then come to a consideration of the effects of atrophy or deficiency of secretion in either lobe, as found in life. Pituitary deficiency may be associated with either the anterior or posterior lobe. The former has been observed to produce the following

train of symptoms :—Retarded growth and development, adiposity, sexual undevelopment, and atrophy of the sex gland (Klein). Posterior lobe deficiency is commonly attended with low blood pressure, lethargy, sub-normal temperature, sluggish metabolism and high tolerance of carbo-hydrates. Massive amounts of sugar may be given in these cases without glycosuria resulting (Klein). The control of metabolism is one of the two important functions of the endocrine system, taken as a whole, and is, indeed, the *main* purpose of some of the individual glands. It is not surprising, then, to find that increase in weight, and amount of adipose tissue is a symptom of certain glandular disturbances. Obesity in animals of endocrine origin is most frequently associated with aberrations in the pituitary, the gonads, and the thyroid. Diseases due to pituitary deficiency constitute an interesting field for endocrine treatment, and in view of the symptoms just recounted as following in the wake of deficient secretion, it seems quite likely that extended clinical trial with anterior lobe preparations would prove of value in stimulating the growth of puny, undersized animals of all kinds, the same as they have done in human beings.

Hypertrophy of the pituitary, with implied hypersecretion, is responsible for developmental disturbances, which vary according to the age at which they appear. For instance, congenital hypertrophy is frequently associated with a general over-development of the body (giantism), whereas a hypertrophy occurring in adult life apparently gives rise to acromegaly, a condition characterised by greatly over-developed extremities. The clinical signs of hyper-function are increased blood pressure, polyuria, glycosuria, nutritive disturbances, and lethargy. It appears to have been satisfactorily proved (1) that the anterior lobe *alone* has an influence on growth, development and life, and in consequence of this, I have considered whether an extract of this lobe might prove of benefit in cases of rickets ; (2) that the posterior lobe has distinct physiological effects on the uterus, blood-vessels, and other tissues, and also an important influence on carbohydrate metabolism (Klein) ; (3) that the extracted substance of the anterior lobe has not been found in the normal circulation.

Therapeutic Actions and Uses. It has been conclusively shown that the gland contains physiologically active substances which are of considerable therapeutic importance, and a solution containing the active principles of the posterior lobe has been placed on the market by a certain well-known commercial house. This solution is known as " Pituitrin," and for the sake of convenience I propose to use this term whenever I refer to the glandular extract. Subcutaneous or intravenous injection of Pituitrin is followed shortly after by a rise in blood pressure, brought about by a constriction of the arterioles, and accompanied by an increased force of the heart-beat and a lowered pulse rate. Thus the drug is of particular service in cases of *shock or collapse* following severe injuries or major operations. The rapid and almost imperceptible pulse found in such cases is observed to improve considerably after only one injection. Experiments have gone to show that the arterial constriction is effected by direct action on the muscle, and not on the nerve endings of the blood-vessels, as is the case with adrenalin. The stimulating effect on the arterial system is, moreover, of much longer duration with Pituitrin than is the case after using adrenalin. Strangely enough, the constrictor effect is not quite equally distributed throughout the body, for the renal vessels even become dilated, which is an effect directly opposite to that produced by adrenalin (Swale Vincent). Pituitrin is, therefore, contra-indicated in nephritis. In consequence of this dilatation of renal vessels there is a profuse secretion of urine, and I have several times noticed cats to micturate after a dose of Pituitrin. This drug, then, would again be contra-indicated in any case in which one suspected retention of urine from any cause other than cystic atony. Schafer, Cushny, and various others have noted that with animals other than dogs the second and subsequent injections of equal quantities of an active preparation of the gland bring about progressively smaller increases in pressure, until a point is reached where no pressor, but only a depressor, effect follows. For this reason, I neither employ large doses nor repeat them many times. According to H. C. Hamilton, the action of Pituitrin on the blood pressure of dogs differs from that on cats, in the fact that the depressor action is not so quickly evident. In consequence of its property of constricting blood-vessels, Pituitrin is very valuable in cases of *internal hæmorrhage* of any kind, such as *post-partum* hæmorrhage or hæmoptysis. In the pulmonary hæmorrhage of phthisis, I believe, it has been employed by medical men with unqualified success, for it is said to be the only drug known which lowers pulmonary pressure whilst increasing systemic pressure (*Medical World*, September 29th, 1922).

Just recently I had occasion to use Pituitrin in a female cat after performing oöphorectomy. I can only think that one of my ligatures must have been insufficiently tight, for the hæmorrhage was persistent and the cat looking very anæmic. I was inclined to believe the Pituitrin was the means of arresting the loss of blood and saving the cat's life, although I am assured by Professor Hobday—who has immense experience of such cases—that there is usually little to fear. By far the most important application of Pituitrin is in *uterine inertia*, and the discovery of its oxytocic effect has practically revolutionised the practice of obstetrics. These applications of the drug depend upon its ability to contract plain muscular tissue. The effect on the gravid uterus is of a rhythmical character, closely resembling the labour pains, the uterine muscle at term being extremely susceptible to pituitary stimulation. Contractions will frequently commence in two or three minutes and last up to about two hours. Dale made the first observation in 1907 (*Jour. Physiol.*, May), which

was followed in 1909 by some experiments by Hochwart and Fröblich on normal, gravid, and lactating rabbits. They found that the uterus, after doses of ·3 to ·5 c.c. of pituitary extract, was subjected to powerful and often long-enduring contractions, which effect was very much more striking in the case of a gravid uterus, or in the uterus of a lactating animal. Furthermore, it was observed that intravenous injections into dogs of small amounts of hypophysis extract, increased the sensitiveness of the bladder nerves, and suggested that the extract should prove of clinical value in atonic conditions of the bladder, as well as in those of the uterus. It has given remarkably good results in uterine inertia of the bitch (which animal is probably the one most frequently affected with difficult labour); also in cats and sows. The significance of uterine inertia as a complication of labour is so well known that it hardly needs emphasis, involving as it does not only discomfort, but exhaustion, increased danger of infection and traumatism from prolonged manipulation, possibility of asphyxiation of the offspring, or of the death of the mother. The natural result of these factors is that a slowly-progressing labour is frequently terminated by instrumental interference, and any agent which will speed up matters without proving toxic or detrimental in any way to either the mother or her young should be received with open arms, and employed more generally. Pituitrin appears to act equally well upon either an originally inert uterus, or one which has become inert only after severe but ineffective labour pains. Obviously its use is not advised where there is any mechanical obstruction to birth, nor in cases in which the *os* is not yet dilated.

Several practitioners have, from time to time, reported instances of its successful use in delayed parturition, and they find it is practically non-toxic in doses far larger than are required for therapeutic effect. A dose of 5 c.c. per kilo. of body weight, given experimentally to a small bitch, produced nothing worse than a slight temporary manifestation of uneasiness, and some urinary and fæcal activity. The average oxytocic dose for mares is from 5 to 10 c.c.; for sows and ewes, 3 c.c., to be injected intramuscularly. This may be repeated two or three times at hourly intervals if necessary. For dogs and cats a single intramuscular injection of 3 to 5 m. is usually sufficient; in some cases, however, two or even three doses may be required, and may be repeated at half-hourly or hourly intervals. The makers of Pituitrin have often emphasised the fact that practitioners are too prone to give unnecessarily large doses, and believe that the policy of giving such doses in two parts would, in most cases, lead to the omission of the second half of the dose. When administered over a long period of time, or in very large doses, certain untoward results, such as disorders of carbohydrate metabolism, motor disturbances, and aberrations of the circulatory and respiratory systems may occur. Nevertheless, the amount of Pituitrin required to produce such disturbances is so far in excess of the therapeutic dose that they can be ignored in considering the therapeutic action. It had occurred to me whether this agent could not be employed to bring about abortion, say, for instance, in the case of a well-bred bitch accidentally lined by a mongrel. I have never personally tested it, but I read just recently of some experiments in which the extract was used in three cases in which it was necessary to introduce artificial abortion in humans, because of advanced pulmonary tuberculosis, but in no case could abortion be produced without the simultaneous use of instruments. At a recent meeting at the Royal Society of Medicine, however, Dr. Dale (the Director of the Medical Research Institute) assured me that Pituitrin would not bring about abortion. In addition to the above actions and uses, we must be mindful of the possible value of Pituitrin in some cases of *dysuria*, and *intestinal atony* occurring particularly after parturition or operation; in cases of *impotence* and *cretinism* arising from pituitary deficiency; and lastly in one other hypothetical sphere:—An abstract from *La Clinica Veterinaria* appeared in the *Veterinary Record* in 1915, in which the author made the following observation:—

"Various investigators in different series of experiments have demonstrated that pituitary extract has also a notable effect upon the *secretion of milk*, augmenting it very sensibly. This has been demonstrated in cats, dogs, rabbits, sheep, goats, cows, and also in women. It appears that the substance causing this action is situated in the posterior lobe of the gland. The action may be obtained by administering an extract either hypodermically or intravenously, but the first of these methods gives less active results in cows than in women. Generally, the effect is very energetic after the first injection, and diminishes after a subsequent injection, even when a larger dose is then used. The milk of all animals treated with extracts of the whole gland has been found to be very rich in fatty substances. These experiments deserve to be repeated and controlled; for if they are confirmed upon a large scale, they may have a great practical importance."

Unfortunately, I fancy we shall never be able to convert a 1,000-gallon cow into a 2,000-gallon one, nor make it possible for a bitch, deficient in milk, to rear half-a-dozen puppies by the aid of Pituitrin, because it has been confirmed that the good effect vanishes with the second injection. This same authority mentions that "extirpation of the pituitary causes, among other things, disturbances in the development of the hair, teeth and bones." Could it, then, be possible that alopecia, dental caries, and rickets are in any way connected with atrophy of the gland and deficient secretion? It is a matter which would seem to bear further investigation.

I have read many reports lately of the efficacy of Pituitrin in cases of *diabetes insipidus*. According to many investigators, there is a definite connection between polyuria and a disturbed function of the pituitary body. I am not aware that any attempt to treat animals for diabetes has been made with it, but treatment of human beings seems to have given some

very striking results. Kennaway records that there is very frequently an immediate restoration of a normal state of the urine when pituitary extract is given for the relief of this disease. Reasoning from analogy, there is no apparent reason why animal sufferers should not be equally relieved.

The Testicle.

The internal secretion of this organ deserves mention on account of the attention it has recently attracted, and the influence it has had on the theory of organo-therapy. The use of testicular extract was first recommended in 1889 by Brown-Séquard, who, at the age of 72, caused experiments to be performed upon himself. He described very marked rejuvenating effects, and held that the subcutaneous injections of extracts of testis exercised considerable influence upon the general health as well as on the muscular power. He was led to this conclusion by the consideration that the sexual power is diminished in advanced life, and made the bold deduction from this, that one of the causes of the woes of old age is the diminution of the internal secretion of the testes. This elixir of youth might, however, be obtained by extracting the organs in various ways. It is surprising how widely this theory has been accepted, and with what zeal all sorts of preparations of the testicles and ovaries, including the unaltered human semen, have been used in therapeutics.

Departing for a moment from the paper—was not this the very doctrine which was expounded by Oscar Wilde, with such dire results to himself?

There is no doubt whatever but that the removal of the testicles exercises an important influence on a number of other organs and tissues, and the ready exemplifications are the transformation of the bull into the ox, and the cock into the capon. The operation is followed by a greatly increased somatic development of the animal, and I might quote yet another example, namely, the cat. Geddes is inclined to look upon these results as occasioned by the setting free for general use, of foodstuffs, which would otherwise have been used to provide for the drain of spermatogenesis. In other words, the activity of the sexual glands is opposed to body-growth. Loisel believes that one of the functions of the internal secretion of the testis is to destroy fat in the body. For this reason men are thinner than women, and castrated men become fat in the same way that male animals do. The testicular hormone, therefore, seems to exert a number of influences, notably the development of the secondary sexual characters, and if the glands are removed and their secretion lost to the body, these influences are at once in abeyance. Many experimenters have, however, satisfactorily proved that by the administration of orchitic substance these influences can be restored.

I will quote one or two interesting examples from Swale-Vincent in support of that statement:—"At rutting time, in the male elephant, the glands on the side of the face emit a musky secretion. But if castrated, or a deficiency of testicular secretion exists, this does not happen." "In the case of the cock, it is well known that castration arrests the development of the comb and spurs." "If the testes are extirpated from quite young stags, the antlers never develop." It is stated that if the loss or deficiency of hormone thus produced is artificially made up by introducing orchitin or fresh pieces of testis, these conditions are reversed. "Very important indeed, as bearing on the question of the internal secretion of the testes, are the experiments of Nussbaum. At the approach of the breeding season there is formed in the male frog a thickened pad of skin on the first digit of each fore-limb, associated with an increased muscular development in the forearm. This modification is preparatory to the act of copulation, when the male frog uses its arms in embracing the female, and so assists in pressing out the eggs from the oviduct. If the male frog be castrated, the pad is not formed and the muscles do not develop. Nussbaum found that when pieces of testis were introduced into the dorsal lymph sac of a castrated frog, the swelling on the thumb and hypertrophy of the muscles of the leg took place just as though the frog had not been castrated. This development of secondary sexual characteristic must have been due to absorption of secretions derived from the testicular tissue, since there was no nervous connection." Now, *that* experiment appears to be the sum and substance of the present-day so-called monkey-gland rejuvenation being practised upon man. Extensive experimental evidence, and some clinical observation, has resulted in the widely recommended use of orchitic substance for such conditions as sterility, impotence, wasting, delayed convalescence, and prostatic hypertrophy. It appears to exert a general tonic and restorative action on the bodily functions, probably due to a stimulation of the whole endocrine system. Those of you who read the *Veterinary Journal* (and I hope that means all of you) may remember Mr. Tutt's report in the January issue for 1922. He had been asked to treat a valuable Pomeranian bitch which had missed her last two periods of œstrum, and was several weeks overdue for her present one. Having tried extract of *Corpus Luteum* with no success, he then administered a five-grain tablet of orchic substance once daily. After four days the desired result was obtained, and the bitch subsequently produced a good litter of puppies. Here, then, is a further field for experiment, since we are frequently asked to advise as to bitches which are most irregular, or miss their seasons altogether. In trying *Corpus Luteum* for amenorrhœa, Mr. Tutt was probably ill-advised, as extract of *Corpus Luteum* is mainly concerned in the development of ova and the process of reproduction. This hormone is antagonistic to the one which is obtained from the interstitial cells of the ovary (oöphorin), and it is the latter which is chiefly concerned with the development of the female sexual characteristics and the function of menstruation.

The Suprarenal Gland.

The suprarenal glands of all vertebrates have been shown to contain a substance which possesses a powerful action on the organism, and which the glands normally secrete into the blood-vessels. A Japanese subject—Dr. Takamine—is credited with having isolated the active principle in the year 1900; it was called adrenalin, which name was not admitted into the British Pharmacopœia until 1914. For use in veterinary medicine, adrenalin is extracted from the medulla of the suprarenals of oxen, but the yield is so small that the glands of three animals are required to obtain a single grain of it. It is a comparatively simple substance of rather unstable character, and susceptible to injury by many chemical agents, such as iron, alkalies or oxidising agents. It is thus best stored and administered without admixture.

Physiological Actions. Adrenalin is the most powerful hæmostatic and constringent known, for which purpose it is mostly employed. Like Pituitrin, it constricts the blood-vessels and raises arterial blood pressure, the latter effect being for the most part due to the constriction of the abdominal vessels. But it also exerts an increase in the efficiency of the heart similar to that seen under digitalis, though this action is a subordinate one. The acceleration of the heart under adrenalin is due to stimulation of the terminals of the accelerator nerves in the heart muscle, and is therefore accompanied by a stronger contraction and more complete evacuation of the chambers. It is important to state that all the vessels of the body are not constricted by adrenalin, for those of the lungs, heart, and brain are outside its sphere of action, since they have no vaso-motor nerve supply. We saw that Pituitrin *did* constrict the pulmonary vessels, and so was of value in hæmoptysis. Not so adrenalin. Also that whilst Pituitrin dilated the renal vessels, adrenalin constricts them. Painted on the unbroken skin, adrenalin has no effect, as it fails to penetrate. But when applied to a mucous membrane, the part becomes pale and anæmic, an effect well seen when the drug is applied to the congested conjunctiva or to the mesentery. Applied to the eye, it constricts the vessels of the conjunctiva and dilates the pupil, and often reduces the intra-ocular pressure for a time. It has an inhibitory action on the peristaltic movements of the stomach and intestines; and owing to a reduction in the blood supply to the kidneys, less urine than normal is secreted, or complete anuria may occur. Adrenalin seems to exert only local effects when given by the mouth, but has the best effect when injected intramuscularly. Local application causes such pronounced vaso-constriction that it is only slowly absorbed, and this is why it is so useful when combined with cocaine, as it prevents, to a large extent, the toxic effects of the latter. Animals may be poisoned by large amounts injected hypodermically, the symptoms being prostration, collapse, and paralysis of the central nervous system, ending in failure of the respiration and œdema of the lungs.

Therapeutic Uses. Deficiency of the suprarenal secretion, or disease of the gland, leads to a train of symptoms known as Addison's disease, and it has been supposed that supplying the extract of the gland might counteract this condition by making up the deficiency. As a matter of fact, little success has followed its use for this purpose, and it was thought by Cushny that its failure was probably due to the method of administration, for it has been shown repeatedly that the characteristic effects of adrenalin cannot be elicited by its oral or subcutaneous administration. The great use of adrenalin is due to its local effects on the vessels. No other agent is known which induces such complete contraction of the vessels in any part to which it is applied, but general effects are not produced unless it is injected into the blood. *Bloodlessness* of any part may therefore be induced without alteration of the general blood pressure, and, in fact, without any appreciable effect on other parts of the body. This local ischæmia has been largely employed to allow of bloodless *operations on the eye*, and to remove congestion of the conjunctiva. Recently I found it of great use in the case of a Pekingese which not only had had one eye enucleated but also lacerated by another dog's teeth. When I was called to replace the eye, it was shockingly engorged, and I obtained much assistance from the use of adrenalin. Its general action on the circulation may be taken advantage of in such emergencies as *heart failure* under anæsthesia, or in *shock*; and, in fact, Gottlieb has shown that in animals *poisoned with chloral* or chloroform until the pulse has almost completely ceased, the circulation may be restored immediately by suprarenal extract injected intravenously. In inaccessible hæmorrhage, its intravenous injection might possibly constrict the vessels and permit of clot formation, but the great rise in pressure would tend to increase the hæmorrhage, and its use is therefore hazardous. Sprayed into the nose, congestion of the nasal mucous membrane is greatly reduced; whilst *epistaxis* and the hæmorrhage arising from nasal operations is soon arrested. It has been suggested as valuable given orally for *gastric hæmorrhage*, or injected into the *rectum*, *bladder* and *uterus* in congestion or hæmorrhage of those organs. Schafer especially recommends it in *post-partum hæmorrhage*, in which it acts not only on the uterine vessels, but also on the muscular walls. There have been several reports from time to time from practitioners of its efficacy in cases of *laminitis*. The procedure is to inject 1 c.c. of 1 in 1,000 adrenalin solution over the internal and external digital arteries, about the fetlock joint, on one or two occasions, in some cases all four legs receiving treatment. *Azoturia* is another disease said to have been very successfully treated by a 1 in 1,000 solution, doses ranging between two and four drams having been intramuscularly injected. Professor Schlampp, of Munich, recommends 2 to 4 c.c. of the solution diluted up to 10 c.c. with sterile water in cases of purpura hæmorrhagica, whilst Hutschenreiter appears to have made a practice of giving hypodermic injec-

tions of adrenalin to racehorses to immunise susceptible ones against *nasal hæmorrhage*. He gives 85 to 100 m., according to the state of the pulse, etc. The customary doses for the various animals are cattle ℥i-ii; horses, m. 30-60; sheep, m. 10-30; pigs, m. 5-20; dogs, m. 5-10; cats, m. 1-2 *orally*. Half these doses subcutaneously. For intravenous injection, give one-third of the subcutaneous dose and dilute it with 20 times its own volume of normal saline sol.

I thank you, gentlemen, for bearing with me so patiently.

Discussion.

Professor F. G. Hobday, in opening the discussion, said:

It was in an unguarded moment that I promised to open the discussion on organo-therapy, and I am afraid that with the exception of thyroid, parathyroid, pituitrin, and adrenalin, I can claim to know very little. The subject is one which is, comparatively speaking, in its infancy in so far as the general practitioner is concerned, and we have a lot to learn about its mysteries. The study of organo-therapy is a most important subject, and Capt. Kirk has done good service in bringing it forward to-night. It has advanced very much from a laboratory point of view, but a good deal more requires to be done in regard to its pharmacology and dosage, especially do observations need to be made by the general practitioner, as its "prime" work for good has certainly been established by the worker in the laboratory, although my own experience has led me to find certain difficulties in applying an exact dosage in order to obtain the maximum amount of benefit.

All kinds of glandular extracts are now on the market—some still very much in the experimental stage, and in American journals, both veterinary and medical, one reads more and more observation on their application and sees more advertisements attaching to their respective names. The four substances to which I have alluded—thyroid, parathyroid, pituitrin and adrenalin—all are now pretty well established as valuable therapeutic agents in regular use for the treatment of certain ailments in veterinary patients. In fact, it would be difficult to say which was the most used. Their use in the larger animals is perhaps just a little expensive, but the certainty of the results which follow their use more than repays this; and, after all, it is good results which the practitioner requires.

The use of thyroid and parathyroid in certain glandular diseases accompanied by marasmus in small animals is now universal, but the great drawback which I think exists is the hit-or-miss principle of dosage which we have to follow, as one cannot get conversational replies from our patients such as the human medical man does, and one often hears of instances where human patients have been temporarily bowled over by doses which cause constitutional disturbances; but the fact remains that in canine patients a good deal of benefit can be derived. Thyroid and parathyroid are also being used with excellent results in the treatment of sterility of cattle.

Pituitrin.—In pituitrin we have an agent which is absolutely invaluable in parturition cases, and no canine practitioner should be without a bottle of it in his pharmacy.

It must, however, be used with judgment, for it is useless if given to a pregnant bitch while the uterus is full, but not ready to eject its contents. When the time of labour has arrived, and the uterus has commenced its labour pains, and particularly in cases where there is some inertia, pituitrin is the most valuable drug agent we have. It is certain in action and reliable when used with discretion, often saving the further use of instruments after the first pup has been taken away.

The use of adrenalin in hæmorrhage is too well known to need recommendation, and in cases of collapse from other causes it is of excellent value.

That it can be harmful I have had evidence in the dog, as when using it after ascites I have seen death follow an excessive dose on two occasions. Its dosage per pound body weight in small animals needs further study.

The recently-published book by Professor Veroroff on the effect of orchitic substance has attracted much attention, and his article includes its effect not only on men, but on horses, goats, and rams. He published illustrations, and I understand that a well-known very aged English stallion has been made sufficiently virile again in Germany to produce foals.

All these things show that we are almost abreast of the times, and we have in front a valuable addition to our drug armatorium; not the least of those which have been added lately being the extract known as insulin, so valuable as a curative for diabetes.

With all these glands standardisation is necessary, and in this respect a good deal of work has been published in America, and I feel that here I cannot do better than read the summary of a very interesting article published in *Veterinary Medicine* for January of this year by the collaboration of a medical man (Walter E. King, M.D.) and a veterinarian (J. F. Shegley, D.V.M.), of St. Paul, Minnesota, and entitled "Glandular Therapy with Special Reference to Animal Experimentation."

Their summaries, which are a further proof of the valuable work which can be done by collaboration between members of the two professions, are as follows:—

1. With the exception of certain clinical conditions such as neurasthenic and hypochondriac complexes, as found in man, it is possible that the use of glandular preparations may attain the same useful position in the treatment of animal diseases as in human therapeutics.

2. In veterinary practice nymphomania, failure to conceive delayed parturition and retained placenta in the female and impotence in the male, constitute diseases which present a serious problem to the practising veterinarian.

3. Careful grouping of the various endocrine glands in their relation to the different periods of life show that there are certain groups which are active during the following periods of the life of the individual: (1) Youth; (2) Sexual maturity; (3) Pregnancy; (4) Suckling or lactation; (5) Old age. According to present knowledge in the female, the important endocrine glands are twelve in number and in the male seven.

4. In the treatment of (1) failure to conceive, delayed parturition and retained placenta and of (2) nymphomania in the female, the rational therapeutic procedure involves the use of incretions from the glands included under the (1) sexual maturity glandular group (ovary, adrenal, thyroid, pituitary) and the (2) pregnancy glandular group (placenta, *corpus luteum*, mammary) respectively. The therapeutic use of glandular extracts for the treatment of impotency in the male calls for the sexual maturity

glandular group (testes, adrenal, thyroid, pituitary, and prostate).

5. The results of preliminary experiments indicate that a properly prepared, synergistically balanced mixture of extracts from the thyroid, adrenal, pituitary and ovarian endrocines (sexual maturity group) can be standardized by its oxytocic action upon the pregnant guinea-pig uterus. In this investigation abortions occurred in 53 per cent. of all experimentally treated pregnant guinea pigs, 80 per cent. of those which received successive injections aborted.

6. The specific action of such preparation in producing abortions in pregnant guinea pigs is based upon the controlling fact that such abortions are not the result of the injection of foreign protein material nor of infection with any living micro-organisms. Furthermore, the oxytocic activity of the experimental preparation is apparently due to the synergistic action of the glandular extract mixture.

7. Other experiments are in progress and additional reports will be made in the near future.

Mr. H. GRAY: I thank Mr. Kirk for kindly bringing this subject before this meeting, and I agree with what he said in many respects, but we must draw distinction between the physiology of the cat, dog, and man and that of the larger animals. One must not draw conclusions from the physiology of the smaller animals and apply them to the herbivora, pig, fowl, etc.

With regard to thyroid, it is best employed in man, because man leads a long life, and you have to make it a useful one. The thyroid function is different in the herbivora from what it is in the carnivora and in man.

Many years ago I got some thyroid for a relative of mine, and the patient improved at once, but after some years' treatment, I got some from another big firm, and she went right back, so I again obtained some from the original firm and she immediately improved again. This shows that the reliability of specific agents vary, and it is not always the most reputable firms that supply the best goods.

Capt. Kirk mentioned rickets as being due to some upset of the nervous system, but it is a well-known fact that the proper treatment for rickets is exercise and massage. I could give an animal vitamines and yet they would get rickets. I could produce rickets in this room whenever I wanted to. We should see for ourselves, and not take everything as appearing in medical literature gospel. The only way to advance veterinary science and even medical science is to make observations on our own patients.

I have used pituitrin, and should like to know the results of the Fellows' observations when using this drug in animals suffering from absolute uterine inertia. My experience is that it is absolutely useless. In other cases, if you leave a bitch alone long enough she will generally have puppies without difficulty; that is, if there is no mechanical impediment in the way.

Adrenalin is a good hæmostatic for local operations, but I advise those who have not had experience of it to use it largely diluted in operations on the dog, as I have seen erysipelas and gangrene following its use after some operations, and I have had patches of necrosis the size of a cheese plate.

In small animals I do not think we often get death from bleeding from operation wounds. Gamgee, in his experiments on the dog, amputated the thigh without even using a ligature, and the animal did not bleed to death. and I myself in spaying always amputate the uterus of cats and bitches without ligaturing, and with success.

Personally I think we cannot claim to want results obtained in human practice. What is the use of bolstering up useless or unfit animals to propagate their unfit species? The proper thing to do is to eradicate the unfit. Perhaps to relieve congestion of the eye and other tissues these hæmostatic agents have beneficial effects.

Miss CUST: I cannot agree with what Mr. Gray says about the extirpation of the thyroid gland making no difference to the ruminant. In my experience, goats which have had this gland removed on both sides always die in from one to two years afterwards.

Professor WOOLDRIDGE: I must thank Capt. Kirk for his most interesting paper, because it will introduce in so many ways thoughts connected with the actions of internal secretions, and I think he is to be congratulated on the way he has introduced this subject. He has found it necessary to confine his remarks to three glands, and I am not at all surprised, because if he had exhausted the subject, we should probably be here until next week. He has certainly given me cause to think in several ways. He has pointed out that the majority of internal secretions may be used for therapeutic actions, and there are just one or two observations I would like to make.

With regard to the use of pituitrin, he appears rather to contradict himself, because he said that after an injection of pituitrin the renal vessels were dilated, and therefore diuresis resulted, yet he recommended the injection of this substance in cases of diabetes insipidus, and said he has had good results from it. These statements appear to be somewhat contradictory, as an agent obviously cannot at the same time cause diuresis and check urinary secretion. It is often dangerous to reason by analogy in regard to different species of animals.

Capt. Kirk pointed out that the effect of the removal of testes and ovaries resulted in increased growth in most cases, especially in the cat and capon. How does he reconcile this in connection with the gelding, which does not increase in growth in comparison with the stallion? And the same is true in the bovine species, since a bullock rarely develops the massive musculation of the bull.

Capt. Kirk referred to the use of testicular extracts given to a bitch which failed to come into œstrum, and after injections had been given for four days the desired result (œstrum) was obtained. That is most interesting, and deserves to be followed up. In this case it is quite possible that the bitch may have been already on the way when the injections were started, as she was already overdue. It is possible that this preparation may prove to be a most valuable agent in cases of delayed œstrum.

With regard to the use of adrenalin, it is employed in diverse conditions, but I must agree with Mr. Gray that great care should be taken in its use. Like Mr. Gray, I now usually avoid adrenalin in conjunction with cocaine for local anæsthesia, because of sloughs which were attributed to the adrenalin. Perhaps both Mr. Gray and I had used it too concentrated. Another cause which might account for this sloughing is that adrenalin is an organic product, and not too stable, so that when the bottle is open it might become contaminated with bacteria, and

thus cause sloughs when injected. With regard to hæmorrhage of vascular internal organs, especially of the liver and lungs, the use of adrenalin increases bleeding, because there is very little or no white muscular tissue in their vessel walls, and blood will ooze out through the channel of least resistance when the adrenalin raises the general blood pressure.

Capt. KIRK: I am very gratified that my paper should have provoked so prolonged and interesting a discussion. My thanks are especially due to Professor Hobday for the thorough manner in which he opened it. Thoroughness is his characteristic, and I think you will all agree that I was fortunate in choosing and obtaining his services.

It was a little disconcerting when, after I had actually written my paper, I one day opened the *Record* to find a report of Dr. Grave's paper on the same subject, delivered somewhere up North. But upon perusing it I found that there was not the slightest overlapping, and I cannot, therefore, be suspected of having been in any way inspired by it.

I think organo-therapy is an intensely interesting subject, and feel sure it has a future before it; but, like many innovations, it is bound to meet with a certain amount of incredulity and opposition. There is no possible doubt about the efficacy of adrenalin, pituitrin and thyroid, but the value of the other products has yet to be more fully investigated. And it is the clinician who must do it. In pointing out the possibilities, I hope that ere long we may be hearing in this room the practical results of your investigations. I regret I was unable to include all the glandular products in my paper, but in one that is restricted to half an hour, such an undertaking is impossible.

I made reference in my paper to rejuvenating operations, and only this week I read that Ard Patrick, the Derby winner of 1902, recently succumbed to the operation. The cutting states:—

"Ard Patrick is dead. The Derby winner of 1902 failed to survive an experimental operation for rejuvenation by the Steinach treatment.

"Ard Patrick when four years old was bought for £21,000 by the German Government. He had been in feeble health for a long time.

"After his Epsom triumph the horse was bought by the German Government for stud purposes. He sired such good horses as Dolomit, Hyon, and Ariel.

"Owing to the fact that the German Government cannot afford to purchase first-class stallions at present, it was decided to make a rejuvenation operation on the Irish horse by the Steinach method, which had proved successful at other stud farms."

The technique of one of the rejuvenating operations appears to be the ligaturing of the *vasa deferentia*, which results in atrophy of the seminiferous tubules, while the interstitial cells of the testicle remain unaffected.

There is an important difference in the result obtained when the whole cord is ligatured from that obtained when the *vas* only is tied. In the former case, all sexual activity comes to an end; in the latter, the animal remains just in the same condition sexually as the control, although, of course, reproduction is impossible in both cases. After ligature of the *vas*, the interstitial cells (from which the hormone is derived) remain unaltered, although the spermatogenic tissue degenerates. Sterility is thus produced, but rejuvenation of every other functioning power is obtained. As regards the other mode of operation, transplantation of the testis was carried out by Hunter and by Berthold, and apparently with complete success. In cocks, Berthold found that the secondary sexual characters were retained after transplantation.

In the human subject, Lichtenstern reports that, after loss of both testes, transplantation of a testis from another man restores the previous physical condition.

In replying to the discussion, Capt. Kirk continued:—Mr. Gray says he can produce rickets in this room, but with all due deference to him, I do not believe him. Some cases of rickets may have been influenced by a lack of sunlight, fresh air and exercise, but, generally, I believe the "exercise theory" to be exploded. I have known litters of puppies all fed the same way, and all exercised together in the open country daily, when one only of their number would become a subject of rickets. There must be forces within the body which affect the formation of bones, and I believe that a deficiency of one or more of the internal secretions would be found to play a very important rôle in the etiology of that disease. Extracts of parathyroid, pituitary body, thymus, red bone marrow, and yeast, have all been considered in connection with rickets.

Adrenalin has great advantages, and if used in proper doses is not toxic. Mr. Gray says, why use it? Has he ever cut himself whilst shaving? Would he not use a drop of adrenalin on the cut in preference to sticking on some cotton wool? If we know of any hæmostatic that will render distinctly useful and rapid effects, why not use it? Mr. Gray further desires us to believe that we do not want the highly-specialised and exacting results obtained by the medical man; but that is a point upon which I very strongly disagree with him. We want as good or even better results, and I shall welcome the day when our profession shall not follow but lead the way.

Professor Wooldridge asks, why use pituitrin in diabetes insipidus, as in this disease the renal vessels are dilated, and therefore it seems contra-indicated? On the surface, this treatment certainly does seem contradictory to the physiological actions of pituitrin, but there have been many reports by medical men of its success. It is considered that diabetes insipidus is due to lack of secretion of the intermediate lobe, and that it can, in practice, be materially relieved by extract of posterior and intermediate lobe. It is a point, however, that still needs investigating.

Professor Wooldridge referred to the case of a bitch which came into œstrum after four days' use of orchitin. He is, of course, correct in surmising that the bitch might have been naturally near her time, but we must bear in mind that she had missed two previous periods, though, when treated, she responded. Ovarian and testicular extracts have been given with success to human beings, so why should they not prove of equal value in the dog? The physiological effect in both is the same.

Professor Wooldridge mentions bad results when adrenalin is added to cocaine for use as a local anæsthetic. I think it must have been used too strong, as I have never had any bad effect from the amount I employ, namely, 1 grain in 32 ozs. of a 2 per cent. solution of cocaine.

With reference to pituitrin as a stimulant to milk secretion, I have had no actual experience of this myself, but merely quote the findings of an authority who published the matter in *La Clinica Veterinaria*.

(*Continued at foot of next page.*)

Suggestion for a non-slip granolithic floor surface.

By Hugh Begg, F.R.C.V.S., Hamilton.

It is generally conceded that, in respect of its cost, wearing qualities, impermeability, ease of repair and cleansing, and from a general sanitary point of view, nothing can equal a well-laid granolithic floor, whether in the cowshed, stable, or piggery. Its only defect is the smoothness of its surface, on which animals are apt to slip and fall, and so injure themselves in various ways.

Many expedients have been adopted to render the surface safer on which to walk, such as grooving in various ways, roughening the surface before the cement has quite set by using a steel brush, or scattering on it at the proper time rough sand or other gritty material which is held fast by the setting cement.

I wish to recommend to those who are interested in the matter the use of roughly-powdered glass for this purpose. When put on the cement surface soon after it has been floated smooth, it becomes firmly incorporated, and provides an absolutely non-slip surface. If applied when the surface is too liquid the glass may be drowned and render necessary a re-application a short time thereafter. For the floor of the cattle stalls, next to the dung channel, to give security of tread to the hind feet of cows, as well as for all granolithic steps and stairs, it is a good plan to provide three rows of the powdered glass surface about one inch broad and one and a half inches apart. This is easily done by making use of a template—a slotted piece of cardboard—and carefully sprinkling the glass through the slots. The first example of this work that I saw was on the granolithic steps of a London restaurant, and its adaptability to byres, etc., at once occurred to me.

When the existing floor of a cowshed is dangerously smooth, the daily sprinkling of a little sand on the walk is essential for the safe turning out of the animals, and the floor of the stalls, however deeply bedded, should be similarly treated, especially the stalls of sick animals that for any reason have a difficulty in rising. For this purpose a cart load or two of sand should be laid in at the beginning of each housing season.

B.V.Sc. Degree.

The following students have passed in the undermentioned subjects for the degree of B.Sc. in Veterinary Science conferred by the University of Edinburgh.

Sanitary Science—

W. H. M. Baird, Edinburgh.
G. F. Boddie, Edinburgh.
A. Brownlee, Mid-Calder.

Pathological Bacteriology—

G. F. Boddie, Edinburgh.
N. Dobson, Bradford.

(*Continued from previous page.*)

Mr. McIntosh: I should like to propose a very hearty vote of thanks to Capt. Kirk for his contribution. It is quite an unusual one, and one which must have entailed a great deal of time and thought in its preparation. His reply to the various criticisms was equally good.

Examination by Candle-light.

A dispute over the sale of a mare had its sequel in the Walsall County Court, when Edmund Wood, of 110 High Street, Bloxwich, claimed £12 from Joseph Wright, of Calder Fields Farm, for the animal. Wright counter-claimed for £12 for alleged breach of warranty.

Plaintiff stated that after Wright had seen the mare, given her a good examination and said he would buy her, witness purchased the animal from a Mr. Middleton for £10 and sold her to Wright for £12. He had known the animal for a number of years as a good working mare which had been drawing coal. Though she was lame she was nevertheless in good condition and suitable for work on the land. But for the fact that she was lame she would have been worth forty guineas. Wright bought her with the full knowledge that she was lame and obtained a good bargain. "If the mare died now," added witness, "he has had his money's worth out of her." Not long after the purchase Wright said he thought the mare was developing mange, and at his request witness gave him back the cheque he had received for her and had not cashed. Wright then asked Middleton to accept the return of the animal, but Middleton refused. A week previous to this Wright had been fined £10 at the Police Court for not reporting that other horses of his had mange. On six different occasions witness had asked Wright for the £12, but he had said he would not pay until he had received the bill for treating the horse from his veterinary surgeon, and added that he should send his bill to Middleton.

Cross-examined, witness admitted that Wright examined the mare by candle light, but spent some time in doing so, and appeared to give her a thorough examination. It was true that there were some patches of blacklead on the animal, but this was used to promote the growth of hair on bare places, and not for hiding defects. Witness was so confident that the animal was worth the money that he suggested that Wright should put her up for auction in Lichfield Market, and that if there was a profit they should divide it, while if there was a loss he (plaintiff) would stand it. It was true that he said he had no desire to be associated with anything shady. Middleton denied that the horse had the mange, and said it was troubled like that every spring-time but got over it in a few days. He said it suffered from the riff.

For the defence, Mr. Albert Edward Paley, veterinary surgeon, was called, and said that at the request of the police he examined the animal on February 8th, 1921, when he found that its back was covered all over with parasitic mange, which must have been apparent to anyone for some weeks The animal was cured in a a fortnight, but no one would dream of buying a horse which was infected with the mange because of the danger to other stock. He was of opinion that the blacklead was used to hide the condition of the mare and had never heard of it as a treatment for bare patches. Mange had since broken out on one of Mr. Wright's farms. Animals infected with it had to be isolated and would cost up to 35s. a week for their keep.

Wright, in evidence, said he was unable to give the animal a thorough examination in candle light, and relied on the written recommendation which Wood had given him. It proved unable to do heavy work and had scarcely earned its keep. In view of what had since happened he was of opinion that it was practically worthless when he bought it. With a view to testing its value, he put it up for auction in Lichfield Market with a reserve of £10, but there were no bids. Subsequently he sold it for £8, but the purchaser, after paying £4, was unable to meet further obligations, and witness accepted the horse back. He also retained the £4.

Summing up, Judge Tebbs said he believed Wood's story. Plaintiff said he was not aware at the time of the sale that the animal had mange, and it was clear that Wright accepted it knowing it was lame. There would be judgment for Wood for £12 and costs on the claim, and for £4 and costs on the counter claim to cover veterinary surgeon's fees, etc.—*Walsall Observer.*

The Veterinary Record.

26th May, 1923.

National Veterinary Medical Association of Great Britain and Ireland, Limited.

Cheques should be made payable to the Acting General Secretary at the Offices of the Association, 12 Buckingham Palace Road, S.W.1.

N.B.—Members receiving this paper in a brightly-coloured wrapper will please understand that their subscription is already overdue, and should be forwarded at once to the above address.

ELECTION TO COUNCIL R.C.V.S.

By the time that this *Record* is in the hands of our readers the voting papers for the election of members to the Council of the Royal College of Veterinary Surgeons will have been issued, and it behoves every one of us to exercise his right in duly recording his vote.

It is more than a right—it is a duty incumbent upon every member, and we hope that the members of this Association, at least, will not be lacking in their loyalty to the College.

For the information of everyone concerned, we append the names of the candidates seeking election together with a few personal notes which may be of interest.

It would be far from our intention, in so doing, to influence voters in any way whatever, but we urge everyone to record a vote for at least one or more of the candidates.

*C. Blackhurst.

Broughton, Lancs. Qualified New College, Edinburgh, 1886. A general practitioner. Has acted as Local Secretary for the examinations in Liverpool of the R.C.V.S. for the past sixteen years.

O. Charnock Bradley, M.D., D.Sc., Ch.B.

Principal of the Royal (Dick) Veterinary College, Edinburgh. Qualified New College, Edinburgh, 1892. Past President R.C.V.S. and N.V.M.A. Vice-President R.C.V.S. 1912-19-22. A well-known contributor to veterinary literature. First elected to Council 1911.

J. F. Craig, M.A.

Principal, Royal Veterinary College of Ireland. Qualified London, 1902. First elected to Council, 1919.

S. H. Gaiger, F.R.C.V.S., M.R.S.I.

Chief Investigator Animal Diseases Research Association (Scotland). Qualified Liverpool, 1905. Late Principal, Glasgow Veterinary College. Formerly officer in the I.C.V.D. First elected to Council, 1918.

A. Gofton, F.R.C.V.S.

Chief Veterinary Inspector of the Veterinary Department, Public Health, Edinburgh. Qualified Edinburgh, 1899. Formerly examiner in Anatomy, R.C.V.S.; now Chairman of the Examinations Committee. Elected to Council, 1916.

*P. J. Howard.

Ennis, County Clare, Ireland. Qualified Edinburgh, 1895. Well-known general practitioner in Ireland. Was on the Council 1914 to 1922.

*T. M. Inglis, J.P.

Ingleside, Forfar. Qualified New College, Edinburgh, 1888. Well-known veterinary surgeon in Scotland.

J. W. McIntosh, F.R.S.E.

Veterinary surgeon to Hays Wharf, Limited, Southwark. Qualified Edinburgh, 1893. Was previously in practice in Scotland. Chairman of the Finance Committee of the N.V.M.A. A prominent veterinary surgeon in London and District. Elected to Council, 1921.

G. P. Male.

Reading, Berkshire. Qualified London, 1902. General practitioner with an extensive practice at Reading. Lecturer in Veterinary Science, Reading University College. Elected to Council, 1919.

*W. D. Rees.

Trealaw, Glamorgan. Qualified Edinburgh, 1897. President of the Mid-West and South Wales Division N.V.M.A. Veterinary Surgeon to the Cambrian Collieries, Ltd., and well known all over South Wales.

*H. L. Roberts, F.R.C.V.S.

Handford Road, Ipswich. Qualified London, 1894. Formerly examiner in Anatomy, R.C.V.S. President Eastern Counties Division N.V.M.A. Prospective M.P. (Labour) for a division of Suffolk, and whose name has been mentioned as a possible Minister of Agriculture.

Sir Stewart Stockman.

Qualified Edinburgh, 1890. Chief Veterinary Officer and Director of Veterinary Research, Ministry of Agriculture, for the past twenty years. Vice-President R.C.V.S., 1909-20-21. Hon. Secretary of the International Veterinary Congress, 1914. President of the Southern Branch N.V.M.A. Elected to Council, 1905.

*New Candidates.

A Wolverhampton Failure.

The public examination of John Edwin Cartwright, veterinary surgeon, of School Street, Wolverhampton, took place at Wolverhampton Bankruptcy Court, on April 25th, when the statement of affairs showed the gross liabilities to be £2,804, expected to rank £2,428, and the deficiency £2,127. Debtor alleged as the causes of his insolvency:—"Slump in trade, competition, high wages, and increase in motor traction."

In reply to the Official Receiver, debtor said he commenced business in 1889, and first got in financial difficulties about two years ago owing to the increase in motor traction and the opening of a shoeing forge by a local tradesman's association, which took away a good deal of his business, at the shoeing forge in particular. Before then his turnover was £2,000 a year, but since it had not exceeded £1,100 a year, or about £20 a week, out of which there was £9 per week in wages and 30s. a week in rent and rates, apart from travelling expenses.

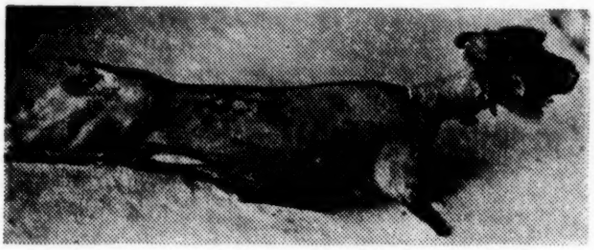
The examination was adjourned.

Clinical and Case Reports.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases

A Case of Lympho-Sarcoma in the Sheep.*

By PETER MCINTYRE, O.B.E., M.R.C.V.S., Veterinary Inspector to the Burgh of Greenock.



The animal was an aged, black-faced ewe in fair condition. During life nothing unusual was noticed, on account of the thick fleece, but the condition would undoubtedly have been evident to palpation.

The animal was slaughtered in the usual way. Mr. Geo. McNeil, Burgh Meat Inspector, discovered the presence of tumours on the surface of the carcase, and detained it for my inspection. On examination I found numerous large nodules on the back and quarters (see fig.), varying from the size of a walnut to the size of an orange. On enquiry the killer informed me that the skin came off quite easily from the surface of the nodules.

On incising the nodules, I found them to consist of tissue resembling in consistency lymphatic glands. The cut surface appeared dark in colour, moist and homogenous. The nodules were readily shelled out of their bed, and left a depression in the underlying tissue. They appeared to have originated in the subcutaneous tissue. No involvement of the organs of the thoracic and abdominal cavities was found. The brain and bones were normal in appearance. Two of the nodules were preserved in formalin and sent to a pathologist, whose report is as follows :—

REPORT BY PATHOLOGIST.

The two specimens of tissue received are each of the size of a walnut. The external surface is smooth. The tissue cuts easily and smoothly. In section, both have the same structure, viz., externally there is a thin, loose capsule of fibrous tissue, underneath which in places small hæmorrhages are noted. Within the capsule the structure is uniform, the tissue being composed of small round or polygonal cells, with densely staining nuclii, and scanty protoplasm, and a fine scanty intercellular stroma. Vessels (blood-vessels) have no endothelial lining, and moderately extensive areas of hæmorrhage of different ages are seen.

The neoplasm is undoubtedly a sarcoma, and I am of the opinion that it is of the variety lympho-sarcoma.

* Presented to the West of Scotland Division.

I consider this case of sufficient rarity to put on record the above facts. In the literature at my disposal I have been unable to find many records of similar cases.

Interesting Anthrax Slides.

By R. PAINE, F.R.C.V.S., Veterinary Institute, Grahamstown, South Africa.

Slide No. 1 was encountered a few years ago in an East Coast fever area, and was taken from a dead beast and showed the combined infection of East Coast fever and anthrax.

Although extensive anthrax inoculation had been carried out in this area, it was not possible to ascertain whether the animal in question had been previously immunised against anthrax.

Slide No. 2 was received upon 16th February, 1923, and was taken from a dead calf immunised fairly recently with the anthrax spore vaccine. This slide showed anthrax and *B. bigeminum*, suggesting that the latter infection broke down the immunity conveyed by the anthrax vaccine.

Slide No. 3 was received upon 15th March, 1923, as a smear taken upon 14th March, 1923, from a living ox immunised about three months previously with the anthrax spore vaccine; this smear showed a heavy anthrax infestation.

The writer proceeded to the farm upon 16th March, 1923, expecting to find a dead beast, and was naturally surprised to find that the ox had made a complete recovery, and had a consistently normal temperature. The scar on the ear from whence the smear was taken was clearly visible, and the surrounding hairs were still blood-stained.

Slide Nos. 4 and 5 were received upon 21st March, 1923, having been taken from a cow on the same farm as slide No. 3. These two slides were taken on 20th March, 1923. This cow had also been immunised at the same time as the above-mentioned ox with anthrax spore vaccine.

Slide No. 4 was taken from the cow two hours before death, and yet both it and No. 5 (taken after death) showed a heavy anthrax infestation.

The case of the ox causes one to wonder whether in many natural cases of anthrax followed by recovery, but possibly only showing a temperature rise, generalised infestation of the blood occurs. Of course, very constant blood examinations upon such cases would be necessary to warrant a definite contrary opinion. Further, both this case and the case of the cow clearly contradict the established ruling that general infestation of the blood stream with the anthrax organism must necessitate immediate death.

Leaping over a gate leading into a Stourport field, a bullock crashed on top of a passing motor-car. It landed with its hind feet on the bonnet and the fore feet on the vacant seat beside the driver, a well-known Worcestershire Shorthorn breeder. The windscreen was smashed and the car otherwise damaged, but the driver, although covered with broken glass, was unhurt.

Association Reports.

Lancashire Division.

The annual meeting of the Lancashire Division of the National Veterinary Medical Association was held at the Midland Adelphi Hotel, Liverpool, on Friday, 16th February, 1923, at 5 p.m.

F. G. Edwards, Esq., F.R.C.V.S. (President), occupied the chair, and there were also present Messrs. J. T. Allen, F. A. Ball, W. L. Cockburn, T. Dobie, H. G. Hewetson, H. R. Hewetson, A. H. Leyland, G. Mayall, A. M. Munroe, A. W. Noel Pillers, J. Spruell, H. Sumner, T. Wilson, Wm. Woods, J. H. Wright and J. Urmson. Apologies for absence were received from Messrs. Brittlebank, R. Hughes, Taylor, McKenna. Clarkson, Gibbin, Locke and Stent.

The minutes of the last meeting, having been published in the *Veterinary Record*, were taken as read.

CORRESPONDENCE.—The Hon. Secretary read correspondence as follows:

Letter from the Council of the N.V.M.A. *re* the improper use of tuberculin. Mr. WOODS, speaking as a member of the Committee that had been considering the question, urged the members to support the Council, and said that he was in agreement with the views expressed in the letter. Mr. SUMNER, in support, said that there was a lack of direct evidence of the improper use of tuberculin and asked any member who could give such evidence to come forward. Mr. MAYALL suggested that the Association circularise the members, as he was sure that the necessary evidence would be obtained if a direct appeal was made to members. On the motion of Mr. WOODS, seconded by Mr. SUMNER, it was resolved: "That this meeting is entirely in agreement with the terms of the resolution embodied in the letter read by the Secretary."

Letter from Prof. Bradley *re* Centenary of Royal Dick College. Proposed by Mr. PILLERS, seconded by Mr. SUMNER, and resolved: "That the President and Hon. Secretary be appointed a Committee, with power to add to their numbers, to further the raising of funds for the above, and that the Centenary Committee be informed of the action taken."

Letter from Royal Sanitary Institute asking for a delegate to be appointed to attend the 34th Annual Congress at Hull. Resolved: "That the President be requested to appoint a delegate to attend the Congress.."

"FIELD" DISTEMPER COUNCIL.—Letter from "Field" Distemper Council appealing for Funds. Resolved, on the motion of Mr. SUMNER, seconded by MR. PILLERS, "That this Association pay a subscription of five guineas per annum for three years to the funds of the Distemper Council."

ELECTION OF NEW MEMBERS.—Mr. DOBIE proposed Mr. Andrew Macpherson Fulton, Bebbington, Birkenhead, for membership, and, on the motion of the PRESIDENT (Mr. F. G. Edwards), seconded by Mr. SUMNER, Mr. Percy Abson, M.R.C.V.S., Whitefield, Mr. C. Hargreaves, M.R.C.V.S., Birkenhead, and Mr. P. T. Lindsay, M.R.C.V.S., Woolton, were elected members of the Association.

PRESIDENTIAL ADDRESS.

Mr. F. G. EDWARDS, F.R.C.V.S., Chester.

Gentlemen,—I thank you very much for the honour you have conferred upon me by electing me your President for the coming year. I accepted with some hesitation, knowing full well that there were others more eligible for the post than I. Having accepted, I shall endeavour to do my best for the Association during the time I am in office.

It is regrettable that all our meetings are not as well attended as they might be, and one asks, why?—for one would think that every man in active practice would be only too pleased to get away for a few hours three or four times a year to meet his confrères in the way that you cannot do in the course of ordinary practice. You hear their opinions, troubles and worries, and it is sometimes striking to find how little one's own knowledge is. Isolation, apathy and self-centring are not good for us, and the importance of joining a society as soon as they graduate should be impressed upon students.

We have the National Veterinary Medical Association, the local societies, the National Veterinary Benevolent and Mutual Defence Society, the Victoria Benevolent Society and the National Association of Veterinary Inspectors. Including the *Veterinary Record*, the combined subscription to these is £3 17s.6d. I, personally, feel very sorry that Mr. Buxton cannot see his way to carry on the excellent work he has done as Secretary to the "National," and, as a new Secretary is being appointed, would it not be possible to combine all the Societies so far as a general subscription is concerned? £3 17s. 6d. is perhaps a consideration, and if a combined subscription of, say, £3 12s. 6d. for all the Societies could be arranged, it would help the practitioner financially, and perhaps in that way increase the membership. The local Societies would, of course, retain their individuality, and their proportion of the general subscription would be paid over to them, so that they could carry on as before. I make this suggestion with some reserve, more particularly in consideration of the work Mr. W. A. Taylor has done for the Veterinary Benevolent and Defence Society, knowing the difficulties therof, and how much has been done for the different local Societies by men regardless of their own interests.

As a profession it is imperative that we should have an Association such as the "National," a Society bound by mutual interests, promoting a common object, and supporting the Royal College of Veterinary Surgeons. The present, I fear, is a critical time for the veterinary surgeon, and every effort should be made to uphold our legal and professional rights, and pressure should be brought to bear so that we may obtain and hold them. Combinations are powerful. Without coalition we are helpless; and it is the duty of every man in the profession to support the "National" and the Royal College to his utmost, particularly with regard to finance.

The salary question has recently been taken up by the Royal College of Veterinary Surgeons, and it is depressing to hear that one of the heads of the profession considers a salary of £200 per annum, with a transient bonus, adequate remuneration for a graduate of the Royal College. It is surprising to hear that for one post carrying this remuneration there were 27 applicants. The time has now come when the Royal College should fix a minimum salary for these posts, and instruct the graduates not to apply when the remuneration offered is below the amount fixed. This method has acted quite satisfactorily on past occasions. You will not get the best out of a man if he is inadequately paid. Under payment kills enthusiasm.

It is said that our one portal system is likely to be challenged. I have no doubt that the Royal College of Veterinary Surgeons will deal with this in a satisfactory manner, but, at the same time, we cannot help thinking that a veterinary school possessing its own individuality but connected with the life of a university must not be considered inadvisable. The social life, the atmosphere of a university, and the friends one makes are of importance in after years. We are isolated somewhat in the ordinary veterinary school, and this isolation is not good for us. Our matriculation examination is below the standard of that of other professions ; this should not be so, and should be adjusted accordingly. General education has changed considerably during the last 20 years.

The Milk and Dairies Amendment Act (1922) came into force on January 1st, 1923, by which an endeavour is made to produce pure milk. Pure milk is so necessary that every effort should be made to carry out the Act. I note that the examination and inoculation of the cattle by the veterinary surgeon is not relied upon very much, bacteriological examination having to be made periodically.

There is an enormous amount of research work to be done in the veterinary profession. Such conditions as foot-and-mouth disease, swine fever, influenza and distemper are most excellent fields for the investigator.

The Field newspaper, which has always been a friend of the veterinary surgeon, is appealing for funds to investigate distemper ; researches lasting for a considerable time are to be carried out by the Medical Research Council, under the supervision of Mr. Basil Buxton, M.R.C.V.S., D.V.H. We certainly wish them success but should have been better pleased to see more veterinary surgeons appointed on the Council.

We see that £30,000 has been offered to Cambridge University by the Ministry of Agriculture to establish an Institute of Animal Pathology and to found a Professorship in Animal Pathology. It is hoped that a veterinary surgeon will be appointed.

There is a Committee sitting at the moment, I believe, which is considering the advisability of controlling the sale of biological products. These have been controlled in the U.S.A. for some years, and are sold under licence to qualified persons only ; here they can be purchased at any drug house by anyone. That a great amount of harm is done by their promiscuous use we know, but it is most difficult to prove.

The issued report on "Grass Disease" is very interesting and is undoubtedly progressive, but whether the botulism organism of the horse is identical with the *Bacillus botulinus* of the human being appears at the moment to be somewhat doubtful. The investigators should, however, receive the sincere thanks of the profession for their researches into the matter. It shows we are not standing still, and have men capable and willing to carry out these investigations given the opportunity and the requisite funds.

Clinical instruction is necessarily not now so extensive, so far as our equine patients are concerned, as in years gone by, and it might perhaps be a wise plan to make it compulsory in the curriculum of a student, that at least his vacations should be passed with a veterinary surgeon in active practice. A list of practitioners willing to take students could be kept by the Secretary of the Royal College of Veterinary Surgeons or the Secretary of the School.

In conclusion, may I ask you to obtain as many new members as possible, to make the meetings as attractive as you can, if not by reading a paper, at least by simply recording an interesting case, or exhibiting a pathological specimen. (Applause.)

A hearty vote of thanks was accorded to the President for his interesting address, on the motion of Mr. WOODS, seconded by Mr. MAYALL.

Mr. A. W. NOEL PILLERS, F.R.C.V.S., then presented a paper on "Spurious Parasites, or Some Mistakes in the Diagnosis of Parasites." [Mr. Pillers' paper has received separate publication.—Ed.]

Mr. Pillers having concluded the reading of his paper, a short discussion then took place. Mr. MAYALL quoted an instance in which he invoked the aid of Mr. Pillers, and thanked him for having read such an interesting paper to the meeting. Messrs. H. SUMNER and WOODS supported Mr. Mayall in his remarks, and, on the motion of the PRESIDENT, the meeting accorded a very hearty vote of thanks to Mr. Pillers for his paper. The proceedings then terminated.

West of Scotland Division.

A meeting of this division was held in the Veterinary College, 83 Buccleuch Street, Glasgow, on Wednesday, 11th April, at 3 p.m.

The President, Mr. Hugh Begg, F.R.C.V.S., occupied the chair, and the following members were present :—Professor Woodhouse ; D. Campbell, Rutherglen ; D. Brown, Kilwinning ; W. Gardner, Maybole ; J. F. Taylor, Cathkin ; C. Murphy, J. Renfrew, S. H. Gaiger, J. Somerville, R. Dickie, R. Mitchell, W. Roy, J. Macfarlane, and Professor Robb, Glasgow ; R. G. Anderson, Cupar ; J. Laird, Kilmarnock ; A. Douglas, Ayr ; J. G. Macgregor, Hamilton, and the Hon. Secretary.

Visitors.—Mr. Jackson Young, Major Dunlop, Mr. Peggie, and Mr. Stark.

Apologies.—Messrs. T. Dalling, J. D. Pottie, and G. H. Livesey.

The minutes of the last meeting were read and approved.

Correspondence.—Letters were read from the Corporation of Glasgow Tramway Co., refusing to grant to veterinary surgeons facilities on their tramcars similar to those granted to medical practitioners; and from Principal Bradley *re* the Dick Centenary Memorial. It was agreed to send a subscription of £5 5s. meantime from the divisional funds, and it was left to members to consider what they would subscribe privately.

A letter from the Glasgow representative of Messrs. Parke, Davis and Co., asking the Division to hear their representative, Dr. J. Stanley White, on Wednesday next, at 3 p.m. It was agreed to ask the doctor to postpone this meeting to a future date as the date referred to was too soon after that day's meeting for the members to gather again in sufficient numbers.

Clinical communications were read from P. McIntyre, M.R.C.V.S., Greenock, and Walter Gardner, M.R.C.V.S., Maybole. [These receive separate publication in *The Record*.—ED.]

The HON. SECRETARY proposed, and the PRESIDENT seconded, that Mr. Stark, M.R.C.V.S., Wishaw, be elected a member of the branch.

Mr. J. MACFARLANE, M.R.C.V.S., Glasgow, exhibited the brain of a horse which he had destroyed that day, showing a psammoma of the brain. The animal had been purchased three years ago, and for the last six months had been slow in work and inclined to go with the head held low. It had been rested several times and seemed to improve, and could trot on quite well if urged. The brain showed a tumour almost the size of a hen's egg in each ventricle.

HUGH BEGG, F.R.C.V.S., Veterinary Inspector for the County of Lanark, then delivered his presidential address. [Mr. Begg's address and the discussion upon it will be published separately.—ED.]

G. W. WEIR, *Hon. Secretary.*

Lincolnshire and District Division.

ANNUAL GENERAL MEETING.

The annual general meeting of the Lincolnshire and District Division of the N.V.M.A. was held at the Angel Hotel, Grantham, on Thursday, February 8th. There were present Mr. T. Hicks, Sleaford (President); Mr. A. D. Lalor, Sleaford (Vice-President); Messrs. F. L. Gooch, Stamford; R. W. Knowles, Wisbech; G. Lockwood, Peterborough; E. Porter-Smith, Lincoln; and W. W. Lang, Brigg (Hon. Secretary).

Letters of apology for their absence were received from Mr. H. H. Truman, March; Mr. W. W. Grasley, Daventry; H. Caulton Reeks, Spalding; H. Walpole, Metheringham; and E. Wardrop, Outwell.

CORRESPONDENCE.

The HON. SECRETARY read a letter from the National Association regarding the improper use of tuberculin. It was therein suggested that the sale of tuberculin should be controlled and only supplied to medical and veterinary men, and the question was asked if the division could give instances of improper use, and if so, they requested that particulars should be sent.

The Hon. Secretary said he had heard of cases where there was grave suspicion, but he could not get proof.

The PRESIDENT remarked that he always applied the eye test and the tail test, and that soon gave the thing away. It did not take long, and was always desirable where they had to deal with a man of whom they were a little frightened. He thought they should be in sympathy with the resolution and reply to that effect.

It was agreed, on the motion of the PRESIDENT, seconded by Mr. PORTER-SMITH, to forward a resolution on these terms.

A long circular letter was received from Dr. Bradley, calling attention to the forthcoming centenary of the Veterinary College. The actual date was November 21st, and it was hoped to hold the celebration in the following week. The hope was expressed that the President, Secretary and as many members as possible of the Lincolnshire Association would be present. It was desired to raise a permanent memorial to the founder to take the form of a graduate fellowship, for which it was estimated that a sum of £10,000 would be required. A bazaar would be held, and an appeal was made for support for this object.

The HON. SECRETARY said the object was an entirely good and correct one, and though times were hard, it should not be difficult to raise £10,000. The appeal was not only to the profession, but also to stock-owners and others interested.

Mr. LOCKWOOD doubted whether they depended on the veterinary profession they would get the money.

The HON. SECRETARY: There are 2,400 in this country.

Mr. LALOR: And many are not getting a living.

It was agreed that the matter be brought before the next meeting.

Thanks were received from the Secretary of the Malcolm Memorial Fund for the Association's donation of £2 2s. for that object.

THE FUTURE OF THE ASSOCIATION.

The next item on the agenda was the election of officers.

MR. GOOCH expressed serious doubts as to whether it was worth while to continue the Association longer as a single unit. That was not a large meeting.

The HON. SECRETARY said he thought the matter should be considered seriously. He would like to give the following figures of the attendances at the last three years' meetings. During this time they had an average of about 28 members, and it should be borne in mind that the total membership was 28.

1920.	Attendances.	Apologies.	Notices ignored.
Grantham	8	8	12
Peterborough	12	2	14
Lincoln	14	2	12
1921.			
Grantham	7	5	16
Peterborough	11	1	16
Lincoln	8	7	13
1922.			
Grantham	6	5	17
Peterborough	8	6	14
Lincoln	11	4	13
1923.			
Grantham	7	7	14

At the first-named meeting eight also sent apologies, so it came back to the fact that twelve—nearly half—ignored the notice of meeting. Some of the members came regularly to one meeting a year, but the figures showed an extraordinary spirit of "don't care."

Mr. GOOCH: Here we are at Grantham, and have not a single Grantham man here.

The HON. SECRETARY: I have done my best, and to get to the meetings I have to leave home early in the morning, and I do not get back until after eight at night.

Mr. GOOCH said he was the oldest member present, and he could remember when they used to go to every town that invited them. They went to Grimsby, and he had to leave home at 6-45 a.m., and did not get back until next morning. No Grimsby men were there. It was the same at Louth—none of the local members were present. So it came to the three places of meeting they now had, and there were just a few faithful ones who stuck to it.

The PRESIDENT remarked that during his secretaryship they had not had enough on several occasions to form a quorum, thus they could only have tea, talk and go home. Lincoln and Peterborough were their head places.

Mr. PORTER-SMITH suggested that they send a card to each member asking for expressions of opinion.

Mr. GOOCH moved that at the next meeting a resolution he put on the agenda paper as to whether the Association should be continued or not.

The HON. SECRETARY said he had not much hope. All through their minute book, which went back to 1904, there was the story of apathy.

Mr. LALOR thought that some of the meetings had been very slow, and probably some thought it was not worth while to attend.

Mr. PORTER-SMITH: The Lincoln meeting was very good.

Mr. LALOR: We have generally had operations there, and that is more interesting.

The HON. SECRETARY suggested that a personal letter, sent to each member, asking for a reply, would show what the wishes of the members were.

The PRESIDENT said he thought this best, and that the Secretary should send a stamped addressed envelope for replies.

The HON. SECRETARY informed the meeting that there were only eight subscriptions unpaid; that was not the difficulty.

Mr. GOOCH now moved that the matter be put on the agenda for the next meeting, and that in the meantime the members be written to as suggested.

This was seconded by Mr. KNOWLES and carried.

THE OFFICERS.

The HON. SECRETARY asked if it were the wish of the members to elect the office-bearers.

Mr. GOOCH moved that the whole of the present office-bearers remain in office until the Peterborough meeting in June. It was hardly fair to ask anyone to accept the offices under the present circumstances.

The PRESIDENT said he was prepared to move an amendment to that. They ought to have a new President. He would not say anything about the Secretary, because one could hardly take over that office for a short period.

The HON. SECRETARY observed that the President had been re-elected once, and could be again.

Mr. LALOR seconded Mr. Gooch's resolution, and there was no seconder for the President's amendment.

The PRESIDENT said he hoped Mr. Lang would continue as Secretary.

The HON. SECRETARY said he had come determined to give up the office, but it was not desirable to "swap horses while crossing the stream," and he would continue until June if they wished.

The PRESIDENT said they could not get another to do the work so admirably as had Mr. Lang, or one who had put so much enthusiasm into the meetings.

Mr. LALOR asked with what divisions they could amalgamate.

Mr. GOOCH replied that some could go to the Midland and some to the Eastern.

The resolution was then carried, the PRESIDENT saying that he hoped in the meantime their members would read the report in the *Record*, and that as a result the period of apathy would pass away, and members would attend better.

The PRESIDENT then read some notes on tuberculosis in the horse, yew tree poisoning and purpura hæmorrhagica, and a good discussion followed.

In the course of the discussion on the President's paper, Mr. GOOCH said he agreed with most that the speaker had said. Only about four or five years ago he was called to see a valuable shire mare which had been sold for 400 guineas at Peterborough. She bred a foal and for twelve months was one of the finest looking mares one could wish to see. The foal was sold for (he thought) 200 or 220 guineas. When the foal was taken off the mare went wrong, and continued to do so. She was insured for 200 guineas. He gave it as his opinion that the spleen was affected, and that the mare would die. The insurance company sent for Professor McQueen. The mare was tested for tuberculin, and there was no re-action. The case went on, and Professor McQueen said that there was no tuberculosis, but he thought there was some organism which was lowering its vitality, and he treated it. The mare died, however, and on the spleen were sixty enormous lumps. It was sent to Professor McQueen, who sent it on to Sir John M'Fadyean. The latter would not part with it, saying that it was a "lovely spleen"; otherwise the speaker would have brought it. There were no other signs of tuberculosis; the only sign of disease was in the spleen.

As regarded yew, Mr. Gooch continued, there was an important point which might have a legal aspect. He had a case in which this was so. A farmer took a farm in which were several fields with plantations for game preserves, and pointed out to the landlord the condition of the fences, that there were yew trees, and that there was a danger of poisoning the cattle. He added that he should hold the landlord responsible for any loss. The cattle got in; three died, and the tenant told the landlord he would be responsible for

£120. The landlord disputed it, but the tenant stopped £100 from the rent. He was sued, and the landlord lost. Some people thought it was the Irish yew that was poisonous. That was wrong, and it was hard to get cattle to eat it. They would eat the ordinary yew, and it was more serious when this was in a dry condition than when fresh.

Mr. LOCKWOOD, after thanking the President for his paper, said he had a case of tuberculosis in a five-year-old cart horse not many weeks ago. It had been doing badly for a long time, and at last became a regular wreck. The most notable symptom in the last few weeks was the stiff movement. Up to then he was rather in a fog as to the cause of the trouble. He tried various vaccines, and nothing seemed to make any difference. Then he tested with tuberculin, and got negative results. The *post-mortem* examination showed that the spleen was full of comparatively small abscesses, varying in size from a nut to a hen's egg. He had the neck bones boiled out, and four showed distinct ostitis. If they were fortunate enough to have another meeting, he would bring them.

Several members described cases which had come under their notice, and indicated the treatment applied and the result. The details of these were discussed by the members.

The HON. SECRETARY also expressed their indebtedness to the President for introducing the discussion. The question which interested him most was that of the purpura and the question of treatment. No one seemed to have mentioned formalin. Professor Imrie said he could cure it with one injection. He (Mr. Lang) had had a good deal of this work in the army, using salt solution and formalin with a stomach tube. Every case recovered. Salt alone killed a horse in India, but formalin seemed to improve them. He considered salt and formalin a preventive of gangrene of the lungs.

The question was asked as to the amount of yew calculated to kill a cow.

The PRESIDENT observed that when he was a student there was in the College a cow which was given various kinds and quantities of yew, and nothing happened. (Laughter.) Much depended on the variety.

Mr. LOCKWOOD: And the idiosyncrasies of the cow.

Mr. LALOR: Sometimes you see them have it, and go on perfectly well.

The meeting then adjourned.

W. W. LANG, *Hon. Secretary.*

R.C.V.S. Annual Dinner.

The Annual Dinner of the Royal College of Veterinary Surgeons will take place on Thursday evening, July 5th, at 7 p.m., at the Hotel Victoria, Northumberland Avenue, London. Tickets will be 12s. 6d. per head, exclusive of wines. All members of the R.C.V.S. who can possibly attend should make every endeavour to support the President on this occasion.

Notes and News.

The Editor will be glad to receive items of professional interest in these columns

Diary of Events.

May 28th—N.V.M.A. Editorial Committee meeting, 12 Buckingham Palace Road, S.W.1.

May 29th—Federation of Medical and Allied Services' Annual Dinner.

May 31st—Last date for Voting Papers to be returned to Secretary R.C.V.S.

June 7th—R.C.V.S. Annual General Meeting, 10 Red Lion Square, W.C., at 12 noon. N.V.M.A. Council meeting, 10 Red Lion Square, at 2-15 p.m. N.V.M.A. Special Committee *re* Biological Products. N.V.M.A. Finance and Advisory Committee.

July 5th—R.C.V.S. Annual Dinner (see note).

Annual General Meeting of the N.V.M.A, August 15th, at York.

The General Secretary has just heard through private correspondence that a meeting of the South-Eastern Division was held at Maidstone on the 17th inst. He very greatly regrets that he was not present, but no information reached him beforehand and no notice of the meeting was received at this office for insertion in the *Record* in the usual way.

* * * *

On May 24th, Empire Day, the voting papers of the R.C.V.S. will be sent out and voting will be in active progress this week-end. It is not much trouble to cross out the names of those candidates whom one does not wish to support and to sign and return the voting paper to the College. It should only take a few moments of time and only a minute amount of energy, and surely no one will grudge the cost of a halfpenny postage stamp. Let us make a start to throw off apathy and to take an intelligent interest in the government of our profession. Mr. Sumner, our President, says that we are governed by a minority, and that two-thirds of the members care so little that they do not trouble to record their votes. Now is the opportunity to prove that he is wrong and remove the stigma that has for so long been one of our distinguishing marks.

* * * *

There seems a unanimity of opinion that the one portal of entry to our profession must be preserved at all costs. We wonder what was exactly in Mr. Sumner's mind when he said recently at Birmingham (*vide* p. 365, *Veterinary Record*): "If the advocates of the wider portal could show that their policy would result in other doors which at present remained closed to the veterinary surgeon being opened, no doubt the Council would be prepared to reconsider their decision." No doubt Mr. Sumner will deal more fully with this statement of his when he addresses some future meeting of one of our divisions.

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

Schmidt and Milk Fever.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I see that Mr. Bullock reports the death of Dr. Med. Vet. J. Schmidt, of Kolding, Denmark, which brings to the minds of some of us in England the regret that he was not recognised by the profession for his great discovery for the treatment of "Bed-fallen Cows."

It was this Danish veterinary practitioner who first enlightened us on the procedure for saving the lives of milch cows after calving, which process, before Schmidt gave his discovery to the veterinary world, was usually fatal. It is a great pity that he was not fully recognised by us, because there is no doubt that his discovery has been one of the greatest boons to our profession that any veterinarian has given during the last century, and I am sorry the profession did not recognise it by giving him the only honour we have at our disposal. I am pleased to see, however, that Belgium did not forget to acknowledge his good work. "Honour to whom honour is due."—Yours, etc.,

15 Norwich Street, Cambridge. *May 13th*, 1923. GEO. A. BANHAM, F.R.C.V.S.

The Editor begs to acknowledge the receipt of the following :—

Report of a meeting of the Central Division, from Capt. J. S. Macdonald, Hon. Secretary.

Report of a meeting of the Mid-West and South Wales Division, from Mr. J. J. Aveston, Hon. Secretary.

Communication from Mr. H. S. Elphick.

Cruelty to animals is dealt with most efficaciously in Egypt. When a case of cruelty is proved, the animal is sent to hospital and his maltreator to prison, from which respective places of internment neither is released until every sore on the animal's body is healed.—*Times*.

Mr. F. D. Acland, presiding at a conference on the milk question at the Royal Society of Arts, said he did not think much progress would be made with regard to bringing about a larger consumption of milk of the best quality in the country until £100,000 or £200,000 was put into a united campaign undertaken by the Government, medical officers of health, the railway companies, and others interested in the matter.

At a dinner of the Andoversford F.U. it was declared that 80 per cent. of the heavy horse societies in England were in danger of having to cease operations through lack of funds; whereas a Government grant of £3,000 would be sufficient to enable them all to carry on.

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaught'd as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange.* Outbreaks reported by the Local Authorities.	Parasitic Mange.* Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.													
Week ended 12th May, 1923 ...	..	...	19	19	..	...	...	...	14	20	3	49	19
Corresponding Week in 1922	1	...	13	17	7	457	...	...	9	15	2	35	5
Corresponding Week in 1921	...	...	7	8	1	12	1	1	32	55	1	33	10
Corresponding Week in 1920	...	...	10	10	...	...	...	...	67	102	4	49	15
Total for 19 weeks, 1923 ...	...	...	299	331	7	271	1	1	444	670	312	713	291
Corresponding period in 1922	1	...	255	283	1094	52914	...	...	636	939	374	449	153
Corresponding period in 1921	18	1	227	267	28	2669	4	7	1270	1986	359	457	137
Corresponding period in 1920	4	...	186	219	42	2505	9	16	2225	3860	274	844	284

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND.												
Week ended 12th May, 1923	...	...	...	...	...	...	Outbreaks 2	2	1	10		
Corresponding Week in 1922 ...	1	1	...	...	...	...	3	7	8	46		
Corresponding Week in 1921 ...	...	...	...	...	...	...	1	...	...	2		
Corresponding Week in 1920 ...	...	...	...	...	..	..	...	1	...	...		
Total for 19 weeks, 1923	...	...	...	...	..	..	43	53	67	531		
Corresponding period in 1922 ...	1	1	...	...	...	...	55	111	111	606		
Corresponding period in 1921 ...	...	...	2	41	.	...	39	130	23	165		
Corresponding period in 1920 ...	1	1	...	...	1	3	60	143	4	16		

NOTE.—The figures for the current year are approximate only.

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